

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No: 10/594,137

Filed: 10/18/2006

Title: Highly Fadeproof Inks Used For Digital Textile Printing  
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Art Unit: 1793

Examiner: Klemanski

Hon. Commissioner of Patents & Trademarks  
Washington, D. C. 20 231

DECLARATION (Rule 132)

Sir:

I, Dr. Mathias Muth of Wiesbaden, Federal Republic of Germany, declare: I am a chemist and a citizen of the Federal Republic of Germany, residing at An der Aulenkaut 41, 65197 Wiesbaden, Federal Republic of Germany.

Since completing my studies in chemistry at the Johannes Gutenberg University, Mainz, Federal Republic of Germany and having taken my doctor's degree at the Institute of Organic Chemistry at the same University in 1998, I have been and I am still employed as a research chemist and product developer in the field of dyes for cellulose and printing by DyStar Textilfarben GmbH & Co. Deutschland KG in Frankfurt am Main, Federal Republic of Germany, the assignee of the application referred to in the heading hereinbefore. I am in charge of development of inks for digital textile printing, and I have published several articles in the field of digital textile printing with disperse dye inks:

1. M. Muth; "Digitaler Textildruck auf Polyester" in Textilveredlung 5/6 2008; p. 12 ff.
2. F. Berninger, K. H. Blank, M. Muth; „Direct vs. Transfer“ in Digital Textile Broadcast Issue 4 2006; p. 8 ff.
3. M. Muth; "Tekstil Boyasinda Bir Lider" in Sign Graphic Eylül 2006; p. 36 f
4. F. Berninger, K. H. Blank, M. Muth "Jettex® D disperse dye inks set new standard for direct digital printing on polyester fabric" in Unitex Nr. 1/2005

5. edited by H. Miller; "New Inks Enable Digital Printing Directly from Computer to Fabric" in International Fiber Journal, inside edition "T<sup>3</sup> Technical Textile Technology" December 2004, p. 16 ff

I have adequate professional experience in the field to which patent application Serial No. 10/594,137 pertains and which was filed by Markus Arnold and myself.

I further declare:

I have reviewed the Office Action mailed 05/21/2008 in which Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lorenz et al. (US 5,646,290) in view of Koike et al. (US 4,689,078). I have also reviewed the references US 5,646,290 and US 4,689,078.

In said action the Examiner holds that it would have been obvious to one having ordinary skill in the art to have used the aqueous suspension of Lorenz et al. in an inkjet process for printing on textile materials since the Koike et al. reference discloses that inkjet printing inks have a particle size of 30µm or less to prevent clogging of the nozzle in the inkjet printer and the aqueous suspension of Lorenz et al. has a particle size of between 0.1 and 5µm.

Even though the particle size disclosed by Lorenz et al. is within the limits disclosed by Koike et al., a person having ordinary skill in the art would not use the aqueous suspension of Lorenz et al. in an inkjet process. The particle size of an aqueous dyestuff suspension is not a sufficient indicator for its usefulness as an ink for an inkjet process for printing on textile materials. Using the aqueous suspension of Lorenz et al. with a particle size of 0.1 to 30 µm in an inkjet process for printing on textile materials cannot lead to an acceptable printing result, because of its insufficient physical and chemical properties:

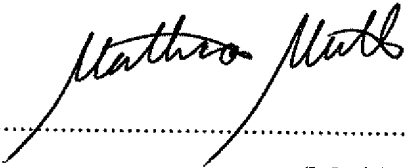
- (i) The pH value is too high and would lead to nozzle plate corrosion;
- (ii) The surface tension is too high for an appropriate wetting behaviour of ink pipes and the interior printhead surface;
- (iii) The stability is inappropriate and the dyestuff dispersion displays a distinct tendency to drying which would lead to clogging of the nozzles.

Consequently, using the suspension of Lorenz et al. in an inkjet process would severely damage the printing equipment, especially the printhead and the nozzle plate.

I further declare that I understand the contents of this Declaration, that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Frankfurt

This 21<sup>st</sup> day of August 2008

  
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(Mathias Muth)